

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant(s): Backes	
Application No.: 10/780840	Group Art Unit: 2616
Filed: 2/18/2004	
Title: Wireless Access Point Protocol Logic	Examiner: Ngo
Attorney Docket No.: 160-038	
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**APPELLANT'S AMENDED BRIEF PURSUANT TO 37 C.F.R. § 1.192**

This Brief is being submitted in accordance with a Notice of Appeal filed contemporaneously with this Brief.

**I. Real Party in Interest**

The real party in interest is AutoCell Laboratories, Inc.

**II. Related Appeals and Interferences**

Substantially similar appeals related to different claim types directed to the same general subject matter are being filed in the following applications:

10/780,838; 10/780,840; 10/780,843.

**III. Status of the Claims**

Claims 1-3 are pending in this application. All of the pending claims are rejected. The status of claims 1-3 is “previously presented.” This is an appeal from the final office action dated December 13, 2007. In that final office action the rejections of all of the pending claims is made final. No claims have been allowed. **The subject of this appeal is limited to the rejection of claim 1.**

**IV. Status of Amendments**

All submitted amendments were entered by the Examiner and the arguments considered.

**V. Summary of Claimed Subject Matter**

Support for the recited limitations is in the specification and drawings as indicated below in parentheses.

1. Apparatus for use by an access point in a wireless communications environment wherein multiple channels are available for communication, comprising:

means for selecting a channel on which to provide service to at least one wireless device (**Figure 5, and in the sentence at page 10, lines 21 through page 11, line 1 “Where multiple APs are distributed in a given area, the APs execute a distributed protocol to pick channels for each AP”**) by:

    sending at least one message indicative of a claim to the selected channel (**at page 18, lines 15-16 “the AP 12 then advertises its intention to use the selected channel by periodically transmitting DRCP Claim messages during the claiming period,”** referencing step 42 in Figure 5);

    if no message indicative of a claim to the selected channel is received from another device, commencing operation on the selected channel (**at page 20, lines 6-7 “if at the end of the claiming period, the AP has succeeded in claiming the selected channel, it begins running on the channel,”** Figure 5, steps 44, 48, 50, and 60); and

    if a message indicative of a claim to the selected channel is received from another device, thereby indicating conflict (**page 19, lines 10-14 and Figure 5, steps 44, 48 and 50**), resolving the conflict by at least one of:

        selecting a different channel on which to provide service (**page 19, lines 21-22, Figure 5, steps 56, 58, 34, 46**), and

reducing transmission power (page 27, lines 5-17 under heading “AP Optimization,” and Figure 17 and associated description at page 31, line 14 through page 33, line 2); and

means for determining which wireless devices become associated with the access point (“AP Auction” at page 39, line 1 through page 40, line 22; Figure 21) by periodically:

sending a message to wireless devices to indicate presence and protocol capability of the access point (at page 39, lines 9-10, “STAs 16 learn of available APs 12 through the Announce messages transmitted by the APs 12”);

receiving, from wireless devices, messages indicative of requests to become associated with the access point (at page 39, lines 12-14, “a STA 16 will send a Bid message to an AP that is “better” than the STA’s current AP, where better means that the AP has a lower biased distance,” and “the AP 12 collects any received Bids over a period of Auction Interval (steps 340,342),” and step 32 in Figure 21);

selecting a subset of the wireless devices from which a message was received indicative of a request to become associated with the access point, thereby rejecting some of the requests to become associated (at page 40, lines 6-8, “the AP 12 selects the bid entries with the highest biased distance delta values, up to acceptsPerAuction entries, and sends a DRCP Accept message to each of the STAs 16 corresponding to those entries,” referencing step 360, Figure 21); and

sending a message to each selected wireless device to indicate that the access point will allow the selected device to communicate in the wireless communications environment via the access point (at page 40, lines 8-10, “the IDs of each STA 16 being sent an Accept is put in a list of outstanding accepts (step 362), and a count of accepted STAs who have not yet associated and registered is noted as numAcceptsOut (step 364)”).

**VI. Grounds of Rejection to be Reviewed on Appeal**

A. Claim 1 is rejected under 35 U.S.C. 103(a) based on US 2003/0236064 (Shiohara) in view of US 2003/0083095 (Liang)<sup>1</sup>

**VII. Argument**

**A. Claim 1 distinguishes the cited combination because the channel selection limitations are associated with a channel claim message.**

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). “All words in a claim must be considered in judging the patentability of that claim against the prior art.” *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

The specification describes in detail how and why a wireless device signals an intent to utilize a channel before actually utilizing that channel.

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<sup>1</sup> only the rejection of claim 1 is being appealed

**“Before a newly added AP 12 starts to ‘Beacon’ (i.e. broadcast management packets to other APs and STAs), the AP 12 ... selects a channel in each band<sup>2</sup>, ... advertises its intention to use the selected channel by periodically transmitting DRCP Claim messages during the claiming period (step 42)<sup>3</sup>,”** and **“if at the end of the claiming period, the AP has succeeded in claiming the selected channel, it begins running on the channel,”** and then **“[t]he AP starts beaconing.”<sup>4</sup>** If at the end of the claim period a Channel Selection Collision is detected, then the AP selects another channel if the collision is with a non-DRCP-active AP, or the conflict is resolved via MAC address comparison if the collision is with a DRCP-active AP.<sup>5</sup>

One advantage of the described procedure is that upon restart of a plurality of APs in a WLAN, e.g., following power interruption, the APs can efficiently select channels relative to one another by individually determining whether a new channel is relatively free from traffic before beginning potentially interfering normal communications. It also provides a means for APs already utilizing the channel to object to the intent of the new AP to use the channel. In other words, the AP solicits input from other devices with the Claim message prior to beginning normal communications on a new channel.

The cited references fail to describe either initial channel selection by APs or messages indicative of an intent to utilize a channel. Rather, both references describe techniques for responding to conflict that is already occurring once

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<sup>2</sup> page 19, second full paragraph

<sup>3</sup> page 19, second full paragraph (emphasis added)

<sup>4</sup> page 21, 1<sup>st</sup> full paragraph

<sup>5</sup> page 20

devices are actually using a channel for active communications, i.e., providing service. Liang, for example, describes a reservation technique for sharing a channel on a time division basis.<sup>6</sup> Shiohara describes a technique by which one of the interfering devices changes to a different operating channel. As described at [0013], a radio signal transmitted in the course of “ordinary communication,” such as a beacon, is used to detect conflict between devices that are using the channel for active communications. It is well known in the art that an access point periodically broadcasts beacons, each having a traffic map indicating availability of buffered packets.<sup>7</sup> The purpose of the beacon is to awaken nodes that are in sleep mode to resynchronize them so that those nodes can receive the buffered data.<sup>8</sup> Consequently, a beacon is indicative of actual use of the channel rather than an indication of mere intent to use the channel in the future.

In view of the above, it will be appreciated that the cited references describe conflict counter measures, whereas the claimed invention describes conflict avoidance. In terms of the limitations recited in claim 1, the claim distinguishes the cited combination by reciting “[a]pparatus for use by an access point ... comprising: means for selecting a channel on which to provide service to at least one wireless device by: sending at least one **message indicative of a claim to the selected channel**; if no message indicative of a claim to the selected channel is received from another device, commencing operation on the selected channel; and if a message indicative of a **claim** to the selected channel is received

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<sup>6</sup> Abstract

<sup>7</sup> *Beacon signals: what, why, how, and where?*, Gerasenko, S.; Joshi, A.; Rayaprolu, S.; Ponnaivaikko, K.; Agrawal, D.P.; *Computer*, Volume 34, Issue 10, Oct. 2001, Page(s):108 - 110, at page 108

<sup>8</sup> *Id.*

from another device, thereby indicating conflict, resolving the conflict by at least one of ... ." (emphasis added). Note that the recited steps, being associated with a claim message, are executed prior to commencing active communications with STAs on the channel.

#### **VIII. Conclusion**

Appellants submit therefore that the rejection of claim 1 under 35 U.S.C. 103 is improper for at least the reasons set forth above. Appellants accordingly request that the rejection be withdrawn and the application put forward for allowance.

Respectfully submitted,

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*Appendix A - Claims*

1. (previously presented) Apparatus for use by an access point in a wireless communications environment wherein multiple channels are available for communication, comprising:

means for selecting a channel on which to provide service to at least one wireless device by:

    sending at least one message indicative of a claim to the selected channel;

    if no message indicative of a claim to the selected channel is received from another device, commencing operation on the selected channel; and

    if a message indicative of a claim to the selected channel is received from another device, thereby indicating conflict, resolving the conflict by at least one of:

        selecting a different channel on which to provide service, and

        reducing transmission power; and

means for determining which wireless devices become associated with the access point by periodically:

    sending a message to wireless devices to indicate presence and protocol capability of the access point;

    receiving, from wireless devices, messages indicative of requests to become associated with the access point;

    selecting a subset of the wireless devices from which a message was received indicative of a request to become associated with the access point, thereby rejecting some of the requests to become associated; and

    sending a message to each selected wireless device to indicate that the access point will allow the selected device to communicate in the wireless communications environment via the access point.

2. (previously presented) The Apparatus of claim 1 further comprising:

means for receiving a registration request message from a wireless device, wherein the wireless device sends the registration request message to the access point to indicate that

the device desires to communicate in the wireless communications environment via the access point using a particular protocol; and  
means for sending a registration acknowledge message to the wireless device which sent the registration request message, wherein the access point sends the registration acknowledge message to indicate that the access point understands that the device will communicate in the wireless communications environment using the particular protocol.

3. (previously presented) The apparatus of claim 1 wherein a message indicative of a request to become associated with the access point is sent by a wireless device to the access point if the wireless device ascertains that the access point is likely to provide better wireless communications performance than another access point through which the wireless device is currently communicating.

*Appendix B - Evidence Submitted*

None.

*Appendix C - Related Proceedings*

None.